

Personal Details

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GitHub: <https://github.com/sanghvirajit>
Portfolio: <https://sanghvirajit19.github.io/Portfolio/>



Research/ Work experience

- 10/2020 - current **Research Associate, Institute of Mathematics and Computer Science**
Universität Koblenz-Landau, Koblenz, Germany.
- **Successfully researched** and developed **C++** code to perform the **PDE constrained optimization** problem using multigrid methods.
 - Generated the **neural networks** from scratch in **Python** to understand the vanishing gradient problems.
 - Ongoing research to develop the code to solve **PDE constrained optimization** problem as a **machine learning problem** using **Automatic differentiation** and **SciPy optimization python library**.
- 09/2021 - current **Student Trainee, Machine Learning Bootcamp**
DataTalks.Club, Berlin
- Preparing the data and doing EDA, analyzing important features.
 - Developed **Credit risk analysis** model with **Decision Tree, XGboost**, and **random forest**.
 - Developed **Insurance fraud claim** model with **XGBoost, LightGBM** and **CatBoost**, and deployed the models on the **AWS cloud service** by creating **Docker containers** and using **AWS Elastic Beanstalk**.
[Projects](#)
- 03/2021 - current **Technical writer and contributor**
Neptune.ai and Medium
- I write about Data science, machine learning and deep learning.
[Neptune.ai Blogs](#)
[Medium Blogs](#)
- 05/2020 - 09/2020 **Internship, Research and Development**
Simerics GmbH, Rottenburg am Neckar, Germany.
- **Developed Python library** for mixed timescale coupling using Python packages like **NumPy, Pandas, Matplotlib**, and **Seaborn**.
 - Successfully Implemented numerical Fluid-Structure Interaction (FSI) coupling algorithms for FSI coupling adapters in Python and **improved** the overall Simulation time by **10%**.
- 05/2019 - 11/2019 **Master's thesis, Department of Internal Combustion Engine Simulation.**
IAV GmbH, Chemnitz, Germany.
- Developed and executed the model method successfully to investigate the Turbine Downstream to increase the turbine pressure ratio and thus the turbine performance.
 - Effectively and efficiently performed meshing, and 3D- CFD simulations of the models using CFD-tool StarCCM+.
- 10/2018 - 03/2019 **Internship, Industrial Hydraulics Department.**
Bosch Rexroth AG, Lohr am main, Germany.
- **Optimized** the shape of hydraulic valves and pumps, and decreased the pressure drop by **18%** using the adjoint shape optimization method with CFD simulation.

09/2016 - 09/2017

Design Engineer, Hydraulic Control Department.

Bosch Rexroth (India) Pvt Ltd.

- Trained to design and test industrial hydraulic valves.
- Created 2D/3D technical drawings with CAD programs.

Education

10/2017 - 09/2020

M.Sc. Computational Engineering

Ruhr-Universität Bochum, Germany

Abschlussnote: 1.6

06/2012 - 03/2016

Bachelor of Technology in Mechanical Engineering

Indus Universität, India

Abschlussnote: 9.22/10

IT/ EDV Knowledge

- **Programs:** MS Word, MS Excel, MS Power Point – very good.
- **Machine Learning – Frameworks:** Keras, TensorFlow, PyTorch, und Scikit-Learn – good.
- **Programming Languages:** Python – Very good, C++ - Very good, SQL – good, and Matlab – good.
- **Linear Algebra und Visualization:** Python-Library – Numpy, Pandas, Matplotlib, Seaborn – very good.
- **Web-based Visualization:** Interactive Dashboard with Plotly Python, und Dash – good.
- **Statistics:** Python, SPSS – good.
- **Data-based management:** RDBMS - PostgreSQL – good.
- **Software/Tools:** Docker - good
- **Cloud services:** AWS Elastic Beanstalk - good
- **Data accumulation und - Visualization:** Web-Scraping with Beautiful Soup – good.
- **Operating systems:** Window, Linux – very good.

Languages

- **German** – B1, Fluent in speaking and writing.
- **English** – Mother tongue.

Certifications

Oct 2021

IBM certified Data Science Professional

[Capstone Project](#)

May 2021

The Complete SQL BootCamp 2021 – Udemy

Volunteering Experience

02/2018 - 03/2019

Vice President, Student Council

Ruhr-Universität Bochum, Germany

Awards

2017

Gold Medal

Indus Universität, India

- Awarded for academic excellence in the bachelor's degree program.

Koblenz, 10/2021



Place, Date - Signature